

- \* SWBAT relate the motion of an object to graphs of position, velocity, and acceleration
- \* SWBAT describe the forces in falling and terminal velocity

Sep 6-2:31 PM

# Welcome!!!

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SECA Physics  
Tuesday 8 October 2013

Centering...

\* Pick up:

- slip of paper (for later)
- half slip for predictions

Test on Thursday =  
don't miss  
TOMORROW!

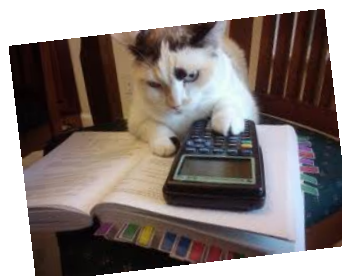
## Opening Question:

If a student earns 3 credits per semester, how many credits will they have earned after 4 semesters?

$$3 \frac{\text{CR}}{\text{sem}} \cdot 4 \text{ sem} = 12 \text{ CR}$$

Can you create a similar question about speed, time, and distance?

$$3 \frac{\text{mi}}{\text{hr}} \cdot 4 \text{ hr} = 12 \text{ mi}$$



Sep 7-7:04 AM

## Catchy Physics Phrases: Speed, Velocity, Acceleration

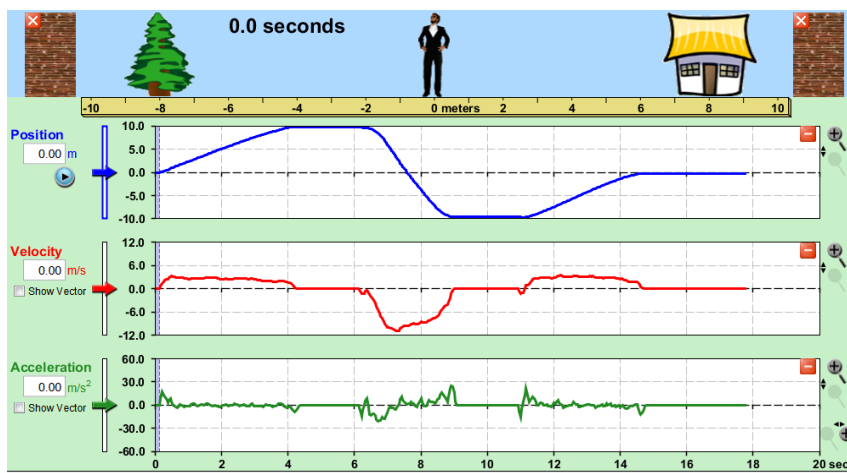
Speed is  
Change in distance over  
change in time

Velocity is  
Speed with direction

Acceleration is  
Change in **velocity** over  
change in time

Oct 4-7:27 AM

## Daily 3 was from the Moving Man packet



- \* Where was he when his VELOCITY was zero?
- \* What was he doing when position was steepest?
- \* What does NEGATIVE velocity mean?

Oct 5-8:37 AM

## Of falling books and feathers...

- Make a prediction with brief explanation
- Make an observation

SPREAD OUT WASHERS  
MADE AN EVEN SOUND ON PAN

LONGER OR FARTHER SOMETHING  
FALLS, THE MORE DISTANCE IT COVERS PER SECOND

⇒ GRAVITY SPEEDS  
THINGS UP

~~HEAVIER, MORE DENSE, BIGGER~~ CATCHES AIR  
Book and Feather (boring):

Golf ball and ping pong ball: TIE!

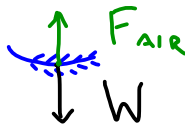
ONE IS LIGHTER,  
SAME MASS,  
SAME SHAPE

2 Kleenex: BALLED UP SAME MASS, SAME SIZE  
DIFFERENT SHAPE

So, how could we get book and feather to fall the same???

GO TO THE MOON, GET RID OF AIR, PUT FEATHER ON BOOK

Terminal Velocity: equilibrium (balanced forces)  
when falling.



Oct 5-7:33 AM

## Falling objects...

Spread out washers made evenly spaced sound

⇒ Things speed up as they fall

⇒ Objects cover more distance each second after  
being released

gravity accelerates

FEATHER & BALL IN VACUUM

<http://www.youtube.com/watch?v=4z8g8OSOMzY>

FEATHER & HAMMER ON MOON

[http://www.youtube.com/watch?v=5C5\\_dOEyAfk](http://www.youtube.com/watch?v=5C5_dOEyAfk)

SKIDNING

<http://www.youtube.com/watch?v=ur40O6nQHsw>

TIME LEFT? POSN, VEL, & ACC IN  
FOOTBALL

<http://www.nbclearn.com/nfl>

Oct 10-7:53 AM

### Daily 3 Questions

- \* Every day except test/project days
- \* 3 Questions on the topics of the day
- \* Main source of daily points
- \* I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

You can't get your points if you don't have your **NAME!!!**

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1. As far as we could tell, which consistently hit the ground first?

- A. the heavier golf ball
- B. the lighter ping pong ball
- ☒ C. it was a tie

2. When there is no air resistance, which is accelerated more?

- A. a heavy object (hammer, metal ball, book)
- B. a light object (feather)
- ☒ C. they are accelerated the same

MOON OR VACUUM JAR

HITS THE GROUND FIRST

3. What is the name for equilibrium while falling?

- ☒ A. Terminal Velocity
- B. Acceleration
- C. Inertia

Oct 8-7:33 AM